

Form PTO-1449 U.S. Department of Commerce
(REV. 2-82) Patent and Trademark Office

Atty. Docket No.
AP33438

Serial No. 09/982616

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

(Use several sheets if necessary)

Applicant

RECEIVED

Filing Date
August 16, 2000

Group
1733 OCT 07 2002

TECH CENTER 1600/2900

U.S. PATENT DOCUMENTS

*Exam. Init.	Document No.	Date	Name	Class	Subclass	Filing Date if Appropriate
MB	4 5 9 5 8 7 2 3	9/28/99	Abramovitz et al.	435	69.1	

FOREIGN PATENT DOCUMENT

Document No.	Date	Country	Class	SubClass	Translator Yes No

OTHER DOCUMENTS (including Author, Title Date, Pertinent Pages, Etc.)

MB	1.	Graeff R, Munshi C, Aarhus R, Johns M, Lee HC. A single residue at the active site of CD38 determines its NAD cyclizing and hydrolyzing activities. J. Biol. Chem. 2001;276:12169-12173.
	2.	Day TA, Hailcock J, Kimber M, Maule AG. Functional ryanodine receptor channels in flatworm muscle fibres. Parasitology 2000;120:417-422.
	3.	Munshi C, Aarhus R, Graeff R, Walseth TF, Levitt D, Lee HC. Identification of the enzymatic active site of CD38 by site-directed mutagenesis. J. Biol. Chem. 2000;275:21566-21571.
	5.	Guse AH. Cyclic ADP-ribose: a novel Ca ²⁺ mobilising second messenger. Cell. Signal 1999;11:309-316. ✓
	6.	Guse AH, da Silva CP, Berg I, Skapenko AL, Weber K, Heyer P, Hohenegger M, Ashamu GA, Schulze-Koops H, Potter BV, Mayr GW. Regulation of calcium signalling in T lymphocytes by the second messenger cyclic ADP-ribose. Nature 1999;398:70-73.
	7.	Lee HC. A unified mechanism of enzymatic synthesis of two calcium messengers: cyclic ADP-ribose and NAADP. Biol. Chem. 1999;380:785-793.
	8.	Lund FE, Muller-Steffner HM, Yu N, Stout CD, Schubert F, Howard MC. CD38 signaling in B lymphocytes is controlled by its ectodomain but occurs independently of enzymatically generated ADP-ribose or cyclic ADP-ribose. J. Immunol. 1999;162:2693-2702.
	9.	Munshi C, Thiel DJ, Mathews II, Aarhus R, Walseth TF, Lee HC. Characterization of the active site of ADP-biosyl cyclase. J. Biol Chem 1999;274:30770-30777.
	10.	Berthelie V, Tixier JM, Muller-Steffner H, Schubert F, Deterre P. Human CD38 is an authentic NAD(P)+ glycohydrolase. Biochem. J 1998;330:1383-1390.
MB	11.	Cockayne DA, Muchamuel T, Grimaldi JC, Muller-Steffner H, Randall TD, Lund FE, Murray R, Schubert F, Howard MC. Mice deficient for the ecto-nicotinamide adenine dinucleotide glycohydrolase CD38 exhibit altered humoral immune responses. Blood 1998;92:1324-1333.

NY02:407578.1

Examiner

Date Considered

4/30/04

* Examiner: Initial citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449 U.S. Department of Commerce
(REV. 2-82) Patent and Trademark Office

Atty. Docket No.
AP33438

Serial No.
09/92616

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**
(Use several sheets if necessary)

Applicant

RECEIVED

Filing Date
August 16, 2000

Group
1733 OCT 07 2002

TECH CENTER 1600/2900

12. Fernandez JE, Deaglio S, Donati D, Beusan IS, Como F, Arancaga A, Forni M, Falini B, Malavasi F. Analysis of the distribution of human CD38 and of its ligand CD31 in normal tissues. *J. Biol. Regul. Homeost. Agents* 1998;12:81-91.
13. Silva CL, Cunha VM, Mendonca-Silva DL, Noel F. Evidence of ryanodine receptors in schistosoma mansoni. *Biochem. Pharmacol.* 1998;56:997-1003.
14. Graeff RM, Walseth TF, Lee HC. Radioimmunoassay for measuring endogenous levels of cyclic ADP-ribose in tissues. *Methods Enzymol.* 1997;280:230-241.
15. Higashida H, Yokoyama S, Hashii M, Taketo M, Higashida M, Takayasu T, Ohshima T, Takasawa S, Okamoto H, Noda M. Muscarinic receptor-mediated dual regulation of ADP-ribosyl cyclase in NG108-15 neuronal cell membranes. *J. Biol. Chem.* 1997;272:31272-31277.
16. Vu CQ, Coyle DL, Jacobson MK. Natural occurrence of 2'-phospho-cyclic ADP ribose in mammalian tissues. *Biochem. Biophys. Res. Commun.* 1997 Jul 30;236(3):723-726.
17. Vu CQ, Coyle DL, Tai HH, Jacobson EL, Jacobson MK. Intramolecular ADP-ribose transfer reactions and calcium signalling. Potential role of 2'-phospho-cyclic ADP-ribose in oxidative stress. *Adv. Exp. Med. Biol.* 1997;419:381-388.
18. Graeff RM, Walseth TF, Hill HK, Lee HC. Fluorescent analogs of cyclic ADP-ribose: synthesis, spectral characterization, and use. *Biochemistry* 1996;35:379-386.
19. Muller-Steffner HM, Augustin A, Schubert F. Mechanism of cyclization of pyridine nucleotides by bovine spleen NAD+ glycohydrolase. Mechanism of cyclization of pyridine nucleotides by bovine spleen NAD+ glycohydrolase. *J. Biol. Chem.* 1996;271:23967-23972.
20. Prasad GS, McRee DE, Shura EA, Levitt DG, Lee HC, Stout CD. Crystal structure of Aplysia ADP ribosyl cyclase, a homologue of the bifunctional ectozyme CD38. *Nat. Struct. Biol.* 1996;3:957-964.
21. Gadangi P, Longaker M, Naime D, Levin RJ, Recht PA, Montesinos MC, Buckley MT, Carlin G, Cronstein BN. The anti-inflammatory mechanism of sulfasalazine is related to adenosine release at inflamed sites. *J. Immunol.* 1996;156:1937-1941.
22. Aarhus R, Graeff RM, Dickey DM, Walseth TF, Lee HC. ADP-ribosyl cyclase and CD38 catalyze the synthesis of a calcium-mobilizing metabolite from NADP. *J. Biol. Chem.* 1995;270:30327-30333.
23. Takahashi K, Kukimoto I, Tokita K, Inageta K, Inoue S, Kontani K, Hoshino S, Nishina H, Kanaho Y, Katada T. Accumulation of cyclic ADP-ribose measured by a specific radioimmunoassay in differentiated human leukemic HL-60 cells with all-trans-retinoic acid. *FEBS Lett.* 1995;371:204-208.
24. Bronstein I, Fortin JJ, Voyta JC, Juo RR, Edwards B, Olesen CE, Lijam N, Kricka LJ. Chemiluminescent reporter gene assays: sensitive detection of the GUS and SEAP gene products. *Biotechniques* 1994;17:172-174, 176-177.
25. Day TA, Bennett JL, Pax RA. Serotonin and its requirement for maintenance of contractility in muscle fibres isolated from *Schistosoma mansoni*. *Parasitology* 1994;108:425-432.
26. Day TA, Maule AG, Shaw C, Halton DW, Moore S, Bennett JL, Pax RA. Platylhelminth FMRFamide-related peptides (FaRPs) contract *Schistosoma mansoni* (Trematoda: Digenea) muscle fibres in vitro. *Parasitology* 1994;109:455-459.

NY02:407578.1

Examiner

Date Considered

9/30/04

* Examiner: Initial citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449 U.S. Department of Commerce
(REV. 2-82) Patent and Trademark Office

Atty. Docket No.
AP33438

Serial No.
09/932,616

Applicant

RECEIVED

Filing Date
August 16, 2000

Group
1733 TECH CENTER 1600/2900

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**
(Use several sheets if necessary)

02/02/2000
MB

27. Graeff RM, Walseth TF, Fryxell K, Branton WD, Lee HC. Enzymatic synthesis and characterizations of cyclic GDP-ribose. A procedure for distinguishing enzymes with ADP-ribosyl cyclase activity. J. Biol. Chem. 1994;269:30260-30267.
28. Koguma T, Takasawa S, Tohgo A, Karasawa T, Furuya Y, Yonekura H, Okamoto H. Cloning and characterization of cDNA encoding rat ADP-ribosyl cyclase/cyclic ADP-ribose hydrolase (homologue to human CD38) from islets of Langerhans. Biochim. Biophys. Acta 1994;1223:160-162.
29. Murphy PM. The molecular biology of leukocyte chemoattractant receptors. Annu. Rev. Immunol. 1994;12:593-633.
30. Weis JH. 'Race no more': an alternative approach to cloning the 5' end of transcripts. Nucleic Acids Res. 1994;22:3427-3428.
31. Day TA, Orr N, Bennett JL, Pax RA. Voltage-gated currents in muscle cells of *Schistosoma mansoni*. Parasitology 1993;106:471-477.
32. Galione A, White A, Willmott N, Turner M, Potter BV, Watson SP. cGMP mobilizes intracellular Ca²⁺ in sea urchin eggs by stimulating cyclic ADP-ribose synthesis. Nature 1993;365:456-459.
33. Harada N, Santos-Argumedo L, Chang R, Grimaldi JC, Lund FE, Brannan CI, Copeland NG, Jenkins NA, Heath AW, Parkhouse RM, Howard M. Expression-cloning of a cDNA encoding a novel murine B' cell activation marker. Homology to human CD38. J. Immunol. 1993;151:3111-3118.
34. Howard M, Grimaldi JC, Bazan JF, Lund FE, Santos-Argumedo L, Parkhouse RM, Walseth TF, Lee HC. Formation and hydrolysis of cyclic ADP-ribose catalyzed by lymphocyte antigen CD38. Science 1993;262:1056-1059.
35. Sorrentino V, Volpe P. Ryanodine receptors: how many, where and why? Trends Pharmacol. Sci. 1993;14:98-103.
36. Hakamata Y, Nakai J, Takeshima H, Imoto K. Primary structure and distribution of a novel ryanodine receptor/calcium release channel from rabbit brain. FEBS Lett 1992;312:229-235.
37. Shinkai Y, Rathbun G, Lam KP, Oltz EM, Stewart V, Mendelsohn M, Charron J, Datta M, Young F, Stall AM, Alt FW. RAG-2-deficient mice lack mature lymphocytes owing to inability to initiate V(D)J rearrangement. Cell 1992;68:855-867.
38. Galione A, Lee HC, Busa WB. Ca²⁺-induced Ca²⁺ release in sea urchin egg homogenates: modulation by cyclic ADP-ribose. Science 1991;253:1143-1146.
39. Lee HC, Aarhus R. ADP-ribosyl cyclase: an enzyme that cyclizes NAD⁺ into a calcium-mobilizing metabolite. Cell Regul. 1991;2:203-209.
40. Jackson DG, Bell JL. Isolation of a cDNA encoding the human CD38 (T10) molecule, a cell surface glycoprotein with an unusual discontinuous pattern of expression during lymphocyte differentiation. J. Immunol. 1990;144:2811-2815.
41. Baggiolini M, Walz A, Kunkel SL. Neutrophil-activating peptide-1/interleukin 8, a novel cytokine that activates neutrophils. J. Clin. Invest. 1989;84:1045-1049.

NY02:407578.1

Examiner

Date Considered

4/30/04

* Examiner: Initial citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449 U.S. Department of Commerce
(REV. 2-82) Patent and Trademark Office

Atty. Docket No.
AP33438

09/1982616

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**
(Use several sheets if necessary)

Applicant

Filing Date
August 16, 2000

Group
1733

- | | |
|-----|---|
| 42. | Lee HC, Walseth TF, Bratt GT, Hayes RN, Clapper DL. Structural determination of a cyclic metabolite of NAD+ with intracellular Ca2+-mobilizing activity. J. Biol. Chem. 1989;264:1608-1615. |
| 43. | Frohman MA, Dush MK, Martin GR. Rapid production of full-length cDNAs from rare transcripts: amplification using a single gene-specific oligonucleotide primer. Proc. Natl. Acad. Sci. USA 1988;85:8998-9002. |
| 44. | Clapper DL, Walseth TF, Dargie PJ, Lee HC. Pyridine nucleotide metabolites stimulate calcium release from sea urchin egg microsomes desensitized to inositol trisphosphate. J. Biol. Chem. 1987;262:9561-9568. |
| 45. | Muller HM, Muller CD, Schubert F. NAD+ glycohydrolase, an ecto-enzyme of calf spleen cells. Biochem. J 1983;212(2):459-464. |
| 46. | Falk W, Goodwin RH Jr, Leonard EJ. A 48-well micro chemotaxis assembly for rapid and accurate measurement of leukocyte migration. J. Immunol. Methods 1980;33:239-247. |
| 47. | Abdallah MA, Biellmann JF, Nordstrom B, Branden CI. The conformation of adenosine diphosphoribose and 8-bromoadenosine diphosphoribose when bound to liver alcohol dehydrogenase. Eur. J. Biochem. 1975;50:475-481. |

RECEIVED

OCT 07 2007

TECH CENTER 1600/2900

NY02:407578.1

Examiner

Date Considered

4/30/04

* Examiner: Initial citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not conformance and not considered. Include copy of this form with next communication to applicant.